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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/342,789 06/29/99 CORSIS

D 3384.1US

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MMC2/0621

EXAMINER

GRAYBILL, D

ART UNIT

PAPER NUMBER

2814

DATE MAILED:

06/21/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/342,789

Applicant(s)

Corsis

Examiner
David E. Graybill

Group Art Unit
2814



☒ Responsive to communication(s) filed on 27 Jan 2000

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1035 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) 1-44 is/are pending in the application

Of the above, claim(s) _____ is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-44 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1, 7, 12-14, 20, 25-27, 33 and 38-43 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakashima (5661086).

At column 6, lines 21-24; column 6, line 55 to column 7, line 1; column 7, line 62 to column 9, line 42; and column 11, line 1 to column 12, line 32 Nakashima teaches a device comprising a semiconductor die 14 having an active surface having a plurality of bond pads 13 thereon and an opposing second surface; a plurality of projections 25 connected to the plurality of bond pads for connection to a host circuit board having circuit connections 21, the plurality of bond pads bonded to the connections; and a metal paddle 12 of a lead frame of a plurality 33 of lead frames having side rails 31 connected to the paddle, the second surface of the die secured to the paddle; an electrically conductive adhesive layer 26a securing the surface of the die to the paddle; sealant packaging material 26 enclosing a portion of the die and covering a portion of the substrate; left and right rails 31; a plurality 33 of leadless paddle frames comprising a heat sink 12 having a suitable thickness for a heat sink positioned between the rails; wherein each of the frames includes a plurality of cross members (members between 32, 32a and 34, 34a, respectively) joining the rails, a generally centrally positioned paddle 12, and support bars 32, 32a joining the paddle to the members and rails.

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In order to further clarify the teaching of a heat sink having a suitable thickness for a heat sink it is noted that a heat sink is a device for the absorption or dissipation of unwanted heat, and the paddle 12 is inherently capable of performing this intended use.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-4, 15-17 and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakashima (5661086) as applied to claims 1, 7, 12-14, 20, 25-27, 33 and 38-43, and further in combination with Fujimoto (5773896).

Nakashima does not appear to explicitly teach wherein the projections include a plurality of projections comprising a BGA. Nonetheless, at column 7, lines 1-23; column 9, lines 12-25; and column 14, lines 1-4 Fujimoto teaches a plurality of projections 22 comprising a BGA. Moreover, it would have been obvious to combine the product of Fujimoto with the product of Nakashima because it would facilitate electrical connection to a second semiconductor chip.

Also, Nakashima does not appear to explicitly teach wherein the projection comprises a ball and a stud bump deposited by a wire bonding machine. Nevertheless, as cited, Fujimoto teaches wherein a projection comprises a ball and a stud bump. In addition, it would have been obvious to combine the product of Fujimoto with the product of Nakashima because it would facilitate electrical connection to a second semiconductor chip.

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Although the applied prior art does not appear to teach the process limitation that the ball and the bump are deposited by a wire bonding machine, the patentability of the product does not depend on its process of production, and the product in the product-by-process claim is the same as the product of the applied prior art.

Claims 5, 6, 8-11, 18, 19, 21-24, 31, 32 and 34-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakashima as applied to claims 1, 7, 12-14, 20, 25-27, 33 and 38-43, and further in combination with applicant's admitted prior art.

Although Nakashima does not appear to explicitly teach the product of claims 5, 6, 8-11, 18, 19, 21-24, 31, 32 and 34-37, at page 5, lines 11-20 applicant teaches that this product is well known. Furthermore, it would have been obvious to combine the well known product with the product of Nakashima because it would provide the die secured to the paddle.

Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakashima as applied to claims 1, 7, 12-14, 20, 25-27, 33 and 38-43, and further in combination with Pavo (5528076).

Although the Nakashima does not appear to explicitly teach wherein the paddle frame strip is formed of aluminum, at column 3, lines 12-22 Pavo teaches this product. Moreover, it would have been obvious to combine the product of Pavo with the product of Nakashima because it would facilitate heat dissipation.

Any telephone inquiry of a general nature or relating to the status (MPEP 203.08) of this application or proceeding should be directed to the group receptionist at (703) 308-1782.


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Any telephone inquiry concerning this communication or earlier communications from the examiner should be directed to David E. Graybill at (703) 308-2947. Regular office hours: Monday through Friday, 8:30 a.m. to 6:00 p.m..

The fax phone number for group 2800 is (703)305-3431.

A handwritten signature in black ink, appearing to read "David E. Graybill".

David E. Graybill
Primary Examiner
Art Unit 2814

D.G.